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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,514	12/03/2003	Martin Heeney	MERCK-2791	3769

23599 7590 05/24/2007  
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EXAMINER
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WU, SHEAN CHIU

ART UNIT	PAPER NUMBER
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1756

MAIL DATE	DELIVERY MODE
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05/24/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/725,514

Applicant(s)

HEENEY ET AL.

Examiner

Shean C. Wu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16, 18, 20-30, 33, 34 and 36 is/are pending in the application.
- 4a) Of the above claim(s) 8, 9, 12-16, 18, 20-23, 27, 28 and 36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10, 11, 24-26, 29, 30, 33 and 34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-16, 18, 20-30, 33, 34 and 36 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. Claims 1-16, 18, 20-30, 33-34 and 36 are pending. Claims 8-9, 12-16, 18, 20-23, 27-28 and 36 withdrawn from consideration are non-elected invention.

#### ***Claim Rejections - 35 USC § 112***

2. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The proviso (c) in item (2) is vague because the condition (a) or (b) will cover (c).

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 5-7, 24-26 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jen et al. (US 5,159,040).

The reference discloses novel precursor polymers of poly(heterocyclic vinylenes) as electrically conductive and non-conductive film, particular the poly(3-methoxy-2,5-thienylene vinylene) in Example 14. Also, see the Examples 12 and 13. The reference

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differs from the claims in that the claimed transistor device comprises a semiconductor or charge transport material of formula I.

The formula IX reads on the present formula I. The reference further teaches that the reference polymer can be treated with p-type and/or n-type dopants. It is well known in the art (for example, US 6,136,702) that these treated dopants are useful for the transistor device including TFT and FET, therefore, it would have been obvious to those skilled in the art to utilize the reference polymer in the claimed device.

With respect to claim 5, the reference polymer will expect the regioregularity of at least 95% because the reference polymer reads on the present formula I.

With respect to claims 24-26, the reference polymer is useful for FET or TFT devices therefore it would have been obvious to those skilled in the art to apply the reference polymer in flat panel display and security devices.

5. Claims 1-7, 10-11, 24-26, 29-30 and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over CAPLUS 1998:44686.

The reference discloses polymer of substituted biothiophene repeating unit having an electrical conductivity. See the formulae shown in the abstract. The reference differs from the claims in that the claimed transistor device comprises a semiconductor or charge transport material of formula I. The polymers disclosed in the references read on the present formula I. It is well known in the art that these electrical conductivity polymer having charge transport activity are useful for the transistor device including TFT and

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FET, therefore, it would have been obvious to those skilled in the art to utilize the reference polymers in the claimed device.

With respect to claim 5, the reference polymers will expect the regioregularity of at least 95% because the reference polymers read on the present formula I.

With respect to claims 24-26, the reference polymers are useful for FET or TFT devices therefore it would have been obvious to those skilled in the art to apply the reference polymers in flat panel display and security devices.

With respect to claims 29 and 30, the reference polymers differ from the present invention in that the present polymer has more specific substituents. Because the substituents in the reference and the present invention are homologous groups therefore, it would have been obvious to those skilled in the art to adjust the length of alkyl chain and repeating unit to arrive at the claimed invention.

6. Claims 1-7, 10-11, 24-26 and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over CAPLUS 2002: 786148.

The reference discloses polymers of substituted biothiophene repeating unit having an electrical conductivity. See the formulae shown in the abstract. The references differ from the claims in that the claimed transistor device comprises a semiconductor or charge transport material of formula I. The polymers disclosed in the reference read on the present formula I. It is well known in the art that these electrical conductivity polymer having charge transport activity are useful for the transistor device including TFT and

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FET, therefore, it would have been obvious to those skilled in the art to utilize the reference polymers in the claimed device.

With respect to claim 5, the reference polymer will expect the regioregularity of at least 95% because the reference polymers read on the present formula I.

With respect to claims 24-26, the reference polymer is useful for FET or TFT devices therefore it would have been obvious to those skilled in the art to apply the reference polymers in flat panel display and security devices.

### *Response to Arguments*


7. Applicant's arguments, see in Remarks, filed 3/13/07, with respect to the rejections of claims 1-7, 10-11, 24-26 and 33-34 under CAPLUS 2001: 809490 have been fully considered and are persuasive. Therefore, the rejections have been withdrawn. However, upon further consideration, new grounds of rejection are made in the sections 2 and 4-6 above.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shean C. Wu whose telephone number is 571-272-1393. The examiner can normally be reached on 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Shean C Wu  
Primary Examiner  
Art Unit 1756

SCW